SEMESTER 1st to 3rd
MULTIDISCIPLINARY COURSE

GLY022I GEOLOGY (PHYSICAL GEOLOGY)

CREDITS: 3

OBJECTIVE/EXPECTED LEARNING OUTCOMES:

The study of this course will help learners to grasp basic concepts in physical geology, in addition, will help them to understand the dynamic nature of the Earth's surface, various processes, and landforms. After the completion of this course, students should be able to:
1 Define the field of Geomorphology and explain its essential principles.
2 Outline the mechanism of the dynamic nature of the Earth's surface and interior of the Earth.
3 Illustrate and explain the forces affecting the crust of the earth and its effect on it.
4 Understand the conceptual and dynamic aspects of landform development and their identification

UNIT-1 (16 Hours)
Origin and evolution of Earth: Catastrophism, uniformitarianism, Epeirogenesis and orogenesis, and base level of erosion. Origin and evolution of Earth`s crust. Theory of Isostasy, Earthquakes: Distribution and types

UNIT-2 (15 Hours)
Introduction to different types of rocks, Rock cycle; cycle of erosion, weathering: definition and types, agents of weathering. Soils: Soil formation and soil profile; Soils of Jammu and Kashmir; Karewas of Kashmir

UNIT-3 (15 Hours)
Geomorphic processes and resulting landforms: Geological work of river, wind, and glaciers; erosional and depositional features. Volcanoes: types, distribution, and eruptional features. Karst topography: Surface and sub-surface features.

SUGGESTED READINGS:

Bloom A. L., 2003: Geomorphology: A Systematic Analysis of Late Cenozoic Landforms, Prentice-Hall of

India, New Delhi.

Bridges E. M., 1990: World Geomorphology, Cambridge University Press, Cambridge.

Christopherson, Robert W., (2011), Geosystems: An Introduction to Physical Geography, 8 Ed.,

Macmillan Publishing Company

Kale V. S. and Gupta A., 2001: Introduction to Geomorphology, Orient Longman, Hyderabad.

Knighton A. D., 1984: Fluvial Forms and Processes, Edward Arnold Publishers, London.

Richards K. S., 1982: Rivers: Form and Processes in Alluvial Channels, Methuen, London.

Selby, M.J., (2005), Earth's Changing Surface, Indian Edition, OUP

Skinner, Brian J. and Stephen C. Porter (2000), The Dynamic Earth: An Introduction to physical Geology,

4th Edition, John Wiley and Sons

Thornbury W. D., 1968: Principles of Geomorphology, Wiley.

Gautam, A (2010): Bhautik Bhugol, Rastogi Punlications, Meerut

Tikkaa, R N (1989): Bhautik Bhugol ka Swaroop, Kedarnath Ram Nath, Meerut

Singh, S (2009):Bhautik Bhugol ka Swaroop, Prayag Pustak,Allahabad

Burbank, D. W. and Anderson, R.S., 2001: Tectonic Geomorphology Blackwell Sciences

Easterbrook, Easterbrook, 1994: Surface Processes and Land Forms. Prentice Hall. McCalpin, J., 1996: Paleoseismology Academic

Press

Summerfield M.A 2011: Geomorphology and Global Tectonics, Wiley India Pvt Ltd.

Thornbury, W.D. 2004: Principles of Geomorphology. 2nd edition CBS Publication